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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/956,940	09/21/2001	Barton F. Haynes	1579-601	4369

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EXAMINER	
SCHWADRON, RONALD B	

ART UNIT	PAPER NUMBER
1644	

DATE MAILED: 12/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/956,940	HAYNES, BARTON F.	
	Examiner	Art Unit	
	Ron Schwadron, Ph.D.	1644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 16-20,22-25 and 32-34 is/are pending in the application.

4a) Of the above claim(s) 19 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 16-18,20,22-25 and 32-34 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

1. Claims 16-18,20,22-25,32-34 are under consideration. Claims 16,17,22,25 have been amended. Claims 32-34 have been newly added.

RESPONSE TO APPLICANTS ARGUMENTS

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 16-18,20,22-24 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification does not provide adequate written description of the claimed invention. The legal standard for sufficiency of a patent's (or a specification's) written description is whether that description "reasonably conveys to the artisan that the inventor had possession at that time of the. . .claimed subject matter", Vas-Cath, Inc. V. Mahurkar, 19 U.S.P.Q.2d 1111 (Fed. Cir. 1991). In the instant case, the specification does not convey to the artisan that the applicant had possession at the time of invention of the claimed inventions.

The instant claims encompass a method that uses any HIV fusion domain to facilitate entry of a molecule into a cells. The specification discloses a single peptide with this function (eg. the peptide disclosed in page 33 of the specification). The claims encompass use of other HIV fusion domains and undisclosed muteins, alleles and variants of said HIV fusion domain. With the exception of the particular HIV derived amino acid sequences disclosed in the specification, the skilled artisan cannot envision

the detailed structure of the encompassed peptides and therefore conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method of isolation. Adequate written description requires more than a mere statement that it is part of the invention and a reference to a potential method of isolating it. In the instant application, the amino acid itself or isolated protein is required. See *Fiers v. Revel*, 25 USPQ 2d 1601 at 1606 (CAFC 1993) and *Amgen Inc. V. Chugai Pharmaceutical Co. Lts.*, 18 USPQ2d 1016.

In view of the aforementioned problems regarding description of the claimed invention, the specification does not provide an adequate written description of the invention claimed herein. See The Regents of the University of California v. Eli Lilly and Company, 43 USPQ2d 1398, 1404-7 (Fed. Cir. 1997). In University of California v. Eli Lilly and Co., 39 U.S.P.Q.2d 1225 (Fed. Cir. 1995) the inventors claimed a genus of DNA species encoding insulin in different vertebrates or mammals, but had only described a single species of cDNA which encoded rat insulin. The court held that only the nucleic acids species described in the specification (i.e. nucleic acids encoding rat insulin) met the description requirement and that the inventors were not entitled to a claim encompassing a genus of nucleic acids encoding insulin from other vertebrates, mammals or humans, id. at 1240. In the instant case, the specification discloses a single peptide HIV fusion peptide with the properties recited in the claims (eg. the peptide disclosed in page 33 of the specification) whilst the claims encompass use of other HIV fusion domains and undisclosed muteins, alleles and variants of said HIV fusion domain The Federal Circuit has held that if an inventor is "unable to envision the detailed constitution of a gene so as to distinguish it from other materials. . .conception has not been achieved until reduction to practice has occurred", Amgen, Inc. v. Chugai Pharmaceutical Co, Ltd., 18 U.S.P.Q.2d 1016 (Fed. Cir. 1991). Attention is also directed to the decision of The Regents of the University of California v. Eli Lilly and Company (CAFC, July 1997) wherein is stated:

"The description requirement of the patent statute requires a description of an invention, not an indication of a result that one might achieve if one made that invention. See In re Wilder, 736 F.2d 1516, 222 USPQ 369, 372-373 (Fed. Cir. 1984) (affirming rejection because the specification does "little more than outlin[e] goals appellants hope the claimed invention achieves and the problems the invention will hopefully ameliorate."). Accordingly, naming a type of material generally known to exist, in the absence of

knowledge as to what that material consists of, is not a description of that material. Thus, as we have previously held, a cDNA is not defined or described by the mere name "cDNA," even if accompanied by the name of the protein that it encodes, but requires a kind of specificity usually achieved by means of the recitation of the sequence of nucleotides that make up the cDNA." See Fiers, 984 F.2d at 1171, 25 USPQ2d at 1606.

Regarding applicants comments about Fiers, University of California, etc, as per the MPEP section 2163, the aforementioned decisions are being applied to applications involving subject matter other than newly discovered genes. The instant claims encompass a method that uses any HIV fusion domain to facilitate entry of a molecule into a cells. The specification discloses a single peptide with this function (eg. the peptide disclosed in page 33 of the specification). The claims encompass use of other HIV fusion domains and undisclosed muteins, alleles and variants of said HIV fusion domain. With the exception of the particular HIV derived amino acid sequences disclosed in the specification, the skilled artisan cannot envision the detailed structure of the encompassed peptides and therefore conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method of isolation. Adequate written description requires more than a mere statement that it is part of the invention and a reference to a potential method of isolating it. In the instant application, the amino acid itself or isolated protein is required. Regarding pages 8 and 9 of the specification, said pages do not disclose specific HIV fusion domains other than the previously referred to peptide of page 33.

4. Regarding priority for the claimed invention and the application of prior art, the claimed invention is not disclosed in parent applications 07/833429, 07/591109 or 07/093854. Therefore, the effective filing date for the claimed invention regarding the application of prior art is that of parent application 08/015987.

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 16-18,20,23-25,32 are rejected under 35 U.S.C. 102(b) as being anticipated by Hart et al. Applicants arguments have been considered and deemed not persuasive.

Hart et al. teach administration of the F-T1-SP10IIIB(A) conjugate peptide to mice (see Table 1). This peptide is the same as disclosed in the specification as an example of a peptide used in the claimed invention (see specification, page 33 and tables 13 and 14). Said peptide contains the fusion domain recited in claim 25 (see Table 1). The fusion domain is conjugated at the c-terminal to a gp120 derived peptide (see Table 1), wherein said peptide is a therapeutic agent . The claimed method encompasses in vivo administration of the conjugate. In view of the fact that Hart et al. discloses in vivo administration of the conjugated recited in the claims, it is an inherent property of said method that it facilitates entry of a molecule into a cell because the prior art method recites the same steps as the claimed method. Furthermore, Hart et al. disclose that CTL generated using their peptide recognize APC processed antigen (see page 9451, second column, continued on next page). APC processing of antigen requires internalization of the antigen (see page 9451, second paragraph, last two paragraphs). The gp120 derived peptide is a therapeutic agent and it "functions intracellularly" because the antigen is processed and associated with MHC intracellularly (see page 9451, second paragraph, last two paragraphs).

Regarding applicants comments, the gp120 derived peptide (see Table 1), is a therapeutic agent and it "functions intracellularly" because the antigen is processed and associated with MHC intracellularly (see page 9451, second paragraph, last two paragraphs).

7. Claims 16-18,20,23,24 are rejected under 35 U.S.C. 102(e) as being anticipated by Helting et al. (US Patent 5,204,259).

Helting et al. teach administration of a HIV p24/gp41 fusion protein to a mammal (see column 12, last paragraph and column 13, fourth paragraph). HIV gp41 comprises an HIV fusion domain (see specification, page 5, first paragraph). The fusion domain is conjugated at the n-terminal to HIV p24 wherein said protein is a therapeutic agent. The claimed method encompasses in vivo administration of the conjugate. In view of the fact that Helting et al. discloses in vivo administration of the conjugated recited in the claims, it is an inherent property of said method that it facilitates entry of a molecule into a cell because the prior art method recites the same steps as the claimed method. It is an inherent property of said conjugate that the conjugate once internalized is processed intracellularly to generate peptides that bind MHC.

Regarding applicants comments about Figure 6, the fusion protein is described in various portions of the specification (see column 5, first paragraph and Examples section). Regarding applicants comments, the p24 derived peptide is a therapeutic agent and it "functions intracellularly" because the antigen is processed and associated with MHC intracellularly.

8. Claims 16-18,20,23,24 are rejected under 35 U.S.C. 102(b) as being anticipated by Anderson et al. (EP 0359347).

Anderson et al. teach in vivo administration of a conjugate containing a therapeutic agent and a HIV fusion peptide (see claim 12) wherein the HIV fusion domain facilitates intracellular uptake of the conjugate (see page 2, page 8, first and fourth paragraph and claims). The peptide disclosed on page 8, line 23 contains an art known HIV fusion domain (see Table 5 of the specification). The conjugate can contain a variety of therapeutic agents which function intracellularly (various protein toxins disclosed on page 4, fourth paragraph). The conjugate is attached to the toxin as per claim 18 (see Example II, page 17).

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 16-18,20,22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson et al. (EP 0359347) in view of Jayasena et al. (US Patent 6,063,612).

Anderson et al. teach in vivo administration of a conjugate containing a therapeutic agent and a HIV fusion peptide (see claim 12) wherein the HIV fusion domain facilitates intracellular uptake of the conjugate (see page 2, page 8, first and fourth paragraph and claims). The peptide disclosed on page 8, line 23 contains an art known HIV fusion domain (see Table 5 of the specification). The conjugate can contain a variety of therapeutic agents which function intracellularly (various protein toxins disclosed on page 4, fourth paragraph). Anderson et al. do not teach use of the agent of claim 22. Jayasena et al. teach an agent encompassed by the agent recited in claim 22 (mutant TAT, see columns 11-14) and in vivo use of said mutant TAT (see column 19, last paragraph). Anderson et al. teach that their invention could be practiced with a variety of art known agents (see column 4) and advantageously targets particular target cells. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have created the claimed invention because Anderson et al. teach in vivo administration of a conjugate containing a therapeutic agent and a HIV fusion protein wherein the HIV fusion domain facilitates intracellular uptake of the conjugate whilst Jayasena et al. teach an agent encompassed by the agent recited in claim 22 (mutant TAT) and in vivo use of said mutant TAT. One of ordinary skill in the art would have been motivated to do the aforementioned because Anderson et al. teach that their invention could be practiced with a variety of art known agents and advantageously targets particular target cells (in this case HIV infected cells).

11. Claims 16-18,20,23-25,32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson et al. (EP 0359347) in view of Hart et al.

Anderson et al. teach in vivo administration of a conjugate containing a therapeutic agent and a HIV fusion peptide (see claim 12) wherein the HIV fusion domain facilitates intracellular uptake of the conjugate (see page 2, page 8, first and fourth paragraph and claims). The peptide disclosed on page 8, line 23 contains an art

known HIV fusion domain (see Table 5 of the specification). The conjugate can contain a variety of therapeutic agents which function intracellularly (various protein toxins disclosed on page 4, fourth paragraph). The conjugate is attached to the toxin as per claim 18 (see Example II, page 17). Anderson et al. do not teach use of the peptide of claims 25 or 32. Anderson et al. teach that the conjugate can contain an HIV fusion peptide (see claim 12) and that the peptide should include the sequence FLG or FLA (see page 8, fourth paragraph). Hart et al. teach a conjugate containing an HIV fusion peptide (see Table 1) and that such HIV fusion peptides mediate cell fusion (see page 9448, second column, first paragraph). The peptide taught by Hart et al. is an HIV fusion peptide that includes the sequence FLG or FLA. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have created the claimed invention because Anderson et al. teach in vivo administration of a conjugate containing a therapeutic agent and a HIV fusion protein wherein the HIV fusion domain facilitates intracellular uptake of the conjugate and that the peptide should include the sequence FLG or FLA whilst Hart et al. teach a conjugate containing an HIV fusion peptide and that such HIV fusion peptides mediate cell fusion. One of ordinary skill in the art would have been motivated to do the aforementioned because Anderson et al. teach that the conjugate can contain an HIV fusion peptide and that the peptide should include the sequence FLG or FLA.

12. Claims 22,33,34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson et al. (EP 0359347) in view of Hart et al. as applied to claims 16-18,20,23-25,32 above, and further in view of Jayasena et al. (US Patent 6,063,612).

The aforementioned rejection renders obvious the claimed invention except for use of the agent of claim 22. Jayasena et al. teach an agent encompassed by the agent recited in claim 22 (mutant TAT, see columns 11-14) and in vivo use of said mutant TAT (see column 19, last paragraph). Anderson et al. teach that their invention could be practiced with a variety of art known agents (see column 4) and advantageously targets particular target cells. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have created the claimed invention because Anderson et al. teach in vivo administration of a conjugate containing a therapeutic agent and a HIV fusion protein wherein the HIV fusion domain facilitates intracellular uptake of the conjugate whilst Jayasena et al. teach an agent encompassed

by the agent recited in claim 22 (mutant TAT) and in vivo use of said mutant TAT. One of ordinary skill in the art would have been motivated to do the aforementioned because Anderson et al. teach that their invention could be practiced with a variety of art known agents and advantageously targets particular target cells (in this case HIV infected cells).

13. No claim is allowed.

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Ron Schwadron whose telephone number is (703) 308-4680. The examiner can normally be reached Monday through Thursday from 7:30 to 6:00. A message may be left on the examiners voice mail service. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Christina Chan can be reached on (703) 308-3973. Any inquiry of a general nature or relating to the status of this application should be directed to the Group 1600 receptionist whose telephone number is (703) 308-0196.

Ron Schwadron, Ph.D.
Primary Examiner
Art Unit 1644

RONALD B. SCHWADRON
PRIMARY EXAMINER
GROUP ~~1800~~ 1640